



## Traverse City Light & Power Wind Generator “Energy in Action”

### Description

In June 1996, Traverse City Light & Power dedicated the first utility scale wind turbine generator in Michigan. The wind turbine is a Vestas model V-44, 600 kW generator and has a blade diameter of 144 ft. on a 160 ft. tower. The wind turbine has a variable blade pitch mechanism which can capture the most energy from winds. In average annual winds of between 14-15 mph the annual production from the wind turbine is estimated between 1.1-1.2 million kWh's which is enough electricity for approximately 200 average Traverse City homes. The capital cost of approximately \$650,000 was partially funded by a \$50,000 grant from the State of Michigan and the U.S. Dept. of Energy's State Energy Program.

### Green Rate

The wind turbine was made possible because of community support for a green rate program. The green rates are voluntary residential and commercial rates available to customers willing to pay a premium for wind generated electricity. The green rate premium of 1.58 cents/kWh amounts to a 17-23% increase depending on the rate class. For the average residential customer this is a \$7.58/month bill increase. An average green rate customer will annually avoid the burning of three tons of coal and air pollution consisting of 10,000 lbs. of carbon dioxide, 60 lbs. of sulfur dioxide, and 40 lbs. of nitrogen oxides. With an amortized operating cost of 5.5 cents/kWh, the customer green rate premium of 1.58 cents/kWh and the federal renewable energy production incentive of 1.5 cents/kWh, the wind generator provides electricity at a cost equal to that available from the municipal power pool.

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